VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2008 FISH TISSUE AND SEDIMENT MONITORING PLAN
WATER MONITORING AND ASSESSMENT

April 8, 2008

Introduction

The Virginia Department of Environmental Quality (DEQ), Office of Water Monitoring and Assessment is responsible for the design and execution of the Statewide Fish Tissue and Sediment Monitoring Program. This document provides information concerning the proposed stations for monitoring fish tissue and sediment during 2008 and the rationale for the station selections.

Objective

The objective of the Statewide Fish Tissue and Sediment Monitoring Program is to systematically assess and evaluate, using a multi-tier screening, water bodies in Virginia in order to identify toxic contaminant(s) accumulation with the potential to adversely affect human users of the resource. A second objective of the program is to determine the presence of toxic chemical contaminants in the aquatic environment which have the potential to adversely affect the aquatic biological community. Data collected will be used to quantify human health risks and ecological/environmental health conditions. In addition, follow-up studies are conducted when problems are found and/or when recommended by the Virginia Department of Health (VDH) through a Memorandum of Agreement between VDH and DEQ. VDH uses data generated by this program to evaluate the need for issuing or modifying fish consumption advisories. The DEQ employs the data to assess water quality for 305(b) Report /303(d) Impaired Water Listing and Total Maximum Daily Load (TMDL) determinations.

Sampling Design

The water bodies of Virginia are separated into fourteen river basins and subbasins (see Table 1). In the past, fish tissue and sediment were sampled in all fourteen of the river basins within a five-year cycle following procedures stated in the DEQ Quality Assurance/Quality Control Project Plan for the Fish Tissue and Sediment Monitoring Program (1998). In April 2000, the General Assembly amended section 62.1-44.19:5 of the code of Virginia which instructed the DEQ to sample all of the river basins within a three-year rotational cycle contingent upon available funding. Between 2001 and 2003 a three year rotation was employed, but due to resource limitations, the program has reverted to the original five year cycle.

Table 1. River Basins in Virginia.

	River Basins	Basin Code
1)	Potomac River Subbasin	1A
2)	Potomac River-Shenandoah River Subbasin	1B
3)	James River	2-
4)	Rappahannock River	3-
5)	Roanoke River	4A
6)	Yadkin River	4B
7)	Chowan-Chowan River Subbasin	5A
8)	Chowan-Albemarle Sound Subbasin	5B
9)	Tennessee and Big Sandy River-Big Sandy Subbasin	6A
10)	Tennessee and Big Sandy River-Clinch Subbasin	6B
11)	Tennessee and Big Sandy River-Holston Subbasin	6C
12)	Chesapeake Bay, Atlantic Ocean, and Small Coastal	7-
13)	York River	8-
14)	New River	9-

The monitoring sites which have been selected for the 2008 routine statewide sampling season will be primarily located in the following river basins: York River Basin and Chesapeake Bay-Atlantic Ocean, and Small Coastal drainages. A total of 85 fish tissue and sediment sampling stations have been selected. In addition to 67 routine sampling stations, the sampling stations list includes 14 stations by special request located in the Potomac and embayment and four in the lower James basin. All of the sampling sites are ranked from 1 to 2 with 1 being the high priority and 2 the lower priority. The higher priority is based on known or potential water quality problems at the sampling location, special requests by other DEQ units, VDH or citizen groups, and/or if the sampling location is a prominent resource for recreational or commercial fishing. Extensive effort will be made to complete all of the stations selected, but priority will be given to the higher ranked stations.

The sampling sites include freshwater and brackish or saltwater locations. The samples that will be collected at each freshwater station include one sediment sample and three to five tissue composite samples (5-10 individuals of the same species per composites) consisting of fish species that are typically consumed by humans. Samples will include at least one bottom feeder (e.g. catfish sp.), which may be highly exposed to chemically contaminated sediments compared to other species, and two to four upper and middle trophic level feeders (e.g. bass and sunfish species, respectively.), which may be exposed to chemical contaminants via biomagnification.

Collection of targeted species for tissue analysis at the brackish and saltwater sites may be problematic since only 10-15% of the fish and shellfish species at the stations are year-round residents and few of the resident species are typically consumed by humans (Murdy et. al. 1997). It is likely that sample collection techniques will yield several species of migratory fish and shellfish that are consumed by humans and a few resident fish species that are not consumed by humans. Contaminants found in migratory fishes may not reflect local pollution problems but may be used to calculate human health risks from consumption. Contaminants found in sediment and resident fishes may be used to identify local inputs of bioaccumulative contaminants. Therefore, the samples that will be collected at each brackish or saltwater station include one sediment sample and three to five composite samples (5-10 individuals of the same species per composite) consisting of an edible migratory, an edible or non-edible resident, and an edible or non-edible bottom species. For a detailed list of species that will be targeted at each brackish or saltwater station (see Table 2).

The entire data set should help determine if any unacceptable human health risks are associated with fish consumption, and if local inputs of bioaccumulative contaminants are in tissue and/or sediment at levels of concern. Samples collected will be analyzed for metal and/or organic contaminants by contract laboratories at the College of William and Mary - Virginia Institute of Marine Science.

Station Selection Criteria

The stations in each basin have been selected to produce site specific conclusions and provide spatial coverage of the entire basin. The following criteria were used to select the 2008 sampling stations:

- Historical Data Review
- Spatial Distribution
- Specific Water Quality Problems
- Major Tributary Status
- External Request from other VADEQ offices, State Agencies, and Citizen Groups
- Point Source Input
- Nonpoint Source
- Major Fishery

The attached references were used in selecting the sampling stations. The water body ID number, station number, priority rank, river mile, latitude, longitude, county, criteria for selection, and corresponding USGS topographical survey map name for each proposed sampling station are provided (see Table 3). Summary maps showing the location of all of the proposed sampling stations are attached (see figures1-4).

Sample Collection and Reporting

Fish tissue and sediment samples will be collected from the early spring through late fall, 2008. Analytical data for all of the samples should be received from the laboratory by the end of June 2009. The data will be tabulated as received and sent to VDH per an October 2000 Memorandum of Agreement between the VDH and DEQ. VDH will make an evaluation regarding potential human health impacts due to the consumption of contaminated fish and issue fish consumption advisories or bans as needed.

The tabulated data will also be sent to the water quality monitoring and assessment managers for review and use in 305(b) reporting and assessed in the 2010 305(b) assessment cycle. The data will also be posted on the DEQ web site at: www.deq.virginia.gov/fishtissue/ for use by the citizens of the Commonwealth and the public at large.

Table 2. Target species at each of the brackish water or saltwater stations.

Migratory Fish (Normally consumed by humans)	Resident Fish (Some may not be consumed by humans)	Benthic Fish/Shellfish (Some may not be consumed by humans)
Striped Bass	White Perch	Oyster spp.
Spot	Yellow Perch	Clam spp.
Atlantic Croaker	Killifish, Banded	Blue Crab
Weak Fish	Killifish, Striped	Summer Flounder
Black Sea Bass	Killifish,Rainwater	Smallmouth Flounder
Spotted Seatrout	Killifish, Marsh	Oyster Toadfish
Black Drum	Killifish, Spotfin	Hogchoker
Red Drum	Mummichogs	Tongue Fish
Silver Perch	Sheepshead Minnow	Channel Catfish
Northern Kingfish	Silverside, Inland	White Catfish
Southern Kingfish	Silverside, Rough	
Gulf Kingfish	Silverside, Atlantic	
Bluefish	Bay Anchovy	
Hickory Shad		
Alewife		
American Shad		
Blueback Herring		

Table 3. 2008 Fish Tissue & Sediment Study Sites **Revised 4/7/08**

Site #	River Mile	Stream Name	Priority	WBID	Latitude	Longitude	City/County	Topo Name	Problem	Reference
Atlantic Ocean and Small Coastal Drainage-Lower Chesapeake Bay										
1	7-EBL002.54	Eastern Branch Lynnhaven River	1	T-C08E	N36 52.624	W76 03.941	Virginia Beach	Cape Henry	PCB & Chlordane in Gizzard Shad, As in Crab, Pb in G. Shad	1998 Fish Tissue Data. 2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.3, 2003 Data
2	7-LAW001.00	Lake Whitehurst	1	T-C08L	N36 54.678	W76 11.681	Virginia Beach	Little Creek	PCB in Yellow Perch, Hg in Carp	1998 Fish Tissue Data. 2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.4, 2003 Data
3	7-LIT000.63	Little Creek Channel near Rt. 60 Bridge	1	T-C08E	N36 55.414	W76 10.594	Norfolk	Little Creek	PCB in Mummichug & Spot, As in Crab, Pb in G. Shad	1998 Fish Tissue Data. 2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.4, 2003 Data
4	7-LKN002.77	Linkhorn Bay	1	T-C08E	N36 52.091	W76 00.815	Virginia Beach	Cape Henry	Lead in Spot, As in Croaker, PCB in Croaker, Spot, G. Shad	1998 Fish Tissue Data, 2003 Data
5	7-LTR000.50	Little Creek Reservoir	1	T-C08L	N36 53.686	W76 09.946	Virginia Beach	Little Creek	Dibenz(a,h) antrecene & Total Chlordane Sed. 1998	1998 Fish Tissue Data, 2002 305b Report Appen. B. Ches. Bay & Small Coastal P.4
6	7-MTL000.20	Lake Trashmore	1	T-C08L	N36 49.659	W76 07.532	Virginia Beach	Kempsville	PCB in Carp, Hg in Largemouth Bass	1998 Fish Tissue Data, 2002 305b Report Appen. B Ches. Bay & Small Coastal P.4, 2003 Data
7	7-OWL000.77	Owl Creek	2	T-D07E	N36 49.330	W75 58.983	Virginia Beach	Virginia Beach	Partial Supporting, Spatial Distribution, Pb in Croaker, As in Crab	305b Report Draft. Appen. B. Ches. Bay & Small Coastal P.5, 2003 Data
Atlantic Ocean and Small Coastal Drainage-Lower Peninsula Between James And York River Basins										
8	7-CHS000.84	Chisman Creek	2	T-C07E	N37 11.003	W76 25.000	York	Poquoson West	DDT in Sediment, As in Crab, PCB in G. Shad, As in Crab, PCB in G. Shad	2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.3, 2003 Data
9	7-NEW001.92	New Market Creek	2	T-C07E	N37 02.117	W76 21.880	Hampton	Hampton	Impaired Watershed DO/Fecal, Spatial Distribution	2002 305b Report Draft. Appen. B. Ches. Bay & Small Coastal P.3
10	7-NWB000.69	Northwest Branch Back River	1	T-C07E	N37 05.935	W76 21.258	Hampton	Hampton	Lead in Spot, As in Croaker, PCB in Croaker, Spot, G. Shad	1998 Fish Tissue Data, 2002 305b Report. Appen. B Ches. Bay & Small Coastal P. 3, 2003 Data
11	7-POQ002.11	Poquoson River	1	T-C07E	N37 08.173	W76 25.983	Poquoson	Poquoson West	Benzo(a)pyrene in Mummichug	1998 Fish Tissue Data, 2002 305b Report Draft. Appen. B Ches. Bay & Small Coastal P. 3
12	7-POQ006.00	Harwoods Mills Reservoir		T-C07L	N37 08.351	W76 27.952	York	Poquoson West	Spatial Distribution, Major Fishery	DGIF Freshwater Fishing Guide 2007
13	7-SWB001.91	Southwest Branch Back River	1	T-C07E	N37 04.218	W76 20.980	Hampton	Hampton	Lead in Spot, As in Croaker, PCB in Croaker, Spot, G. Shad	1998 Fish Tissue Data, 2002 305b Report. Appen. B Ches. Bay & Small Coastal P. 3
14	7-TBC000.60	Tabb Creek	1	T-C07E	N37 05.815	W76 22.058	Hampton	Hampton	PCT, and PAH's, Pb in Blue Crab, G. Shad, Mummichog	USF&W Report 1993. Dist. & Bio. Effects of Selected Cont. in the Back River, VA
Atlantic Ocean and Small Coastal Drainage-Lower Peninsula Between York And Rappahannock River Basins										
15	7-BEA001.00	Beaverdam Swamp Reservoir near dam - Gloucester		P-C05L	N37 26.809	W76 32.407	Gloucester	Gloucester	Spatial Distribution, Major Fishery	DGIF Freshwater Fishing Guide 2007
16	7-EST002.65	East River	1	P-C04E	N37 24.078	W76 20.784	Mathews	Mathews	Arsenic in tissue, PCB in Gizzard Shad	1998 Fish Tissue Data, 2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.2
17	7-FOX002.49	Fox Mill Run near Rt. 616		P-C05R	N37 24.383	W76 32.995	Gloucester	Gloucester	Hg exceeded DEQ SV in Redbreast 1998	1998 Data
18	7-MLF002.45	Milford Bay near Callis Wharf, end of Rt. 634	2	P-C04E	N37 29.566	W76 18.317	Mathews	Mathews	As in Blue Crab, Pb in Mummichug	As in Blue Crab, Pb in Mummichug 2003

Site #	River Mile	Stream Name	Priority	WBID	Latitude	Longitude	City/County	Topo Name	Problem	Reference
19	7-NOR003.65	North River	1	P-C04R	N37 25.066	W76 25.663	Mathews	Ware Neck	PCB in Gizzard Shad, As in Blue Crab & Croaker, PCB in G. Shad, As in Blue Crab & Croaker, PCB in G. Shad	1998 Fish Tissue Data, 2002 305b Report Draft. Appen. B. Ches. Bay & Small Coastal P.2, 2003 Data
20	7-PNK019.85	Piankatank River near the end of Rt. 644	2	P-C03E	N37 33.547	W76 33.399	Middlesex	Saluda	Pb in Brown Bullhead	2003 Data
21	7-WAR005.77	Ware River near the end of Rt. 621 (Gloucester Co)	2	P-C05E	N37 24.022	W76 29.383	Gloucester	Ware Neck	Pb in Blue Crab, PCB in G. Shad	PB in Blue Crab, PCB in G. Shad 2003
22	7-WIN000.88	Winter Harbor off Rt. 608		P-C04E	N37 22.600	W76 15.783	Mathews	Mathews	Spatial Distribution, Major Fishery	-

Atlantic Ocean and Small Coastal Drainage-Northern Neck

23	7-COC000.40	Cockrell Creek	1	P-C01E	N37 49.302	W76 16.873	Northumberland	Reedville	Lead in Blue Crab, As in Croaker & B. Crab, PCB in Spot & Croaker	1998 Fish Tissue Data, 2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.1, 2003 Data
24	7-DYM000.00	Dymer Creek	2	P-C01E	N37 39.860	W76 19.817	Lancaster	Fleets Bay	Impaired Watershed DO, As in Croaker, Spot, Blue Crab, Pb in Blue fish	2002 305b Report . Appen. B. Ches. Bay & Small Coastal P.1, 2003 Data
25	7-GWR007.97	Great Wicomico River ~.5 mile downstream from end of Rt. 707, i.e. Off Cedar Point.	1	P-C01E	N37 52.083	W76 24.217	Northumberland	Lancaster	Chrysene & Benzo(a)anthracene in Mummichug, Pb in G. Shad, PCB in Croaker & G. Shad	1998 Fish Tissue Data, 2002 305b Report Draft. Appen. B. Ches. Bay & Small Coastal P.1, 2003 data.
26	7-IND001.80	Indian Creek	1	P-C01E	N37 41.919	W76 21.072	Lancaster	Fleets Bay	Mercury in Sediment, As in B. Crab, Croaker, Menhaden, PCB in Spot	1998 Fish Tissue Data, 2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.1, 2003 Data

Atlantic Ocean and Small Coastal Drainage-Eastern Shore Chesapeake Bay

27	7-0NF000.20	North Branch Onancock Creek	2	T-C11E	N37 42.841	W75 45.194	Accomack	Pungoteague	Fecal Probem, Onancock STP outfall	2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.4
28	7-CHE005.38	Chesapeake Bay near Kiptopeke State Park	2	T-C16E	N37 09.920	W75 59.182	Northampton	Townsend	Spatial Distribution, Major Fishery	-
29	7-POC002.30	Pocomoke River near mouth of Pitts Creek	1	T-C09E	N37 58.850	W75 37.900	Accomack	Saxos	Spatial Distribution, Major Fishery	-
30	7-SBB000.17	Sandy Bottom Branch	1	T-C10R	N37 54.767	W75 35.500	Accomack	Hallwood	2006 Benthic Impairment, Spatial Distribution	2006 305B Report

Atlantic Ocean and Small Coastal Drainage-Eastern Shore Atlantic Ocean

31	7-ASW003.36	Assawoman Creek	2	T-D02E	N37 51.168	W75° 31.865	Accomack	Bloxom	Spatial Distribution, Major Fishery	-
32	7-CHI003.77	Chincoteague Inlet	2	T-D01E	N37° 55.547	W75° 23.403	Accomack	Chincoteague East	Spatial Distribution, Major Fishery	-
33	7-LTM000.80	Little Mosquito Creek	1	T-D01E	N37 57.027	W75 27.075	Accomack	Chincoteague	Pb in Mummichug, As in Spot, B. Crab, V. Oyster, Pb in Mummichog	1998 Fish Tissue Data, 2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.4, 2003 Data
34	7-OSS000.20	Oyster Slip	2	T-D05R	N37 17.295	W75 55.315	Northampton	Cheriton	As in Sand Shark, Spot, B. Crab, PB in Sand Shark	2003 Data
35	7-PRT001.30	Parting Creek	2	T-D04E	N37 30.860	W75 48.312	Accomack	Exmore	Pyrene in Sediment, As in Croaker B. Crab, Sand Shark, Pb in Mummichog	2002 305b Report. Appen. B. Ches. Bay & Small Coastal P.4, 2003 Data
36	7-RAC000.00	Raccoon Creek	1	T-D06E	N37 07.648	W75 57.120	Northampton	Townsend	As exceed SV in King Fish, Blue Mussel, Black Sea Bass, Blue Crab	2006 Data

York River Basin

37	8-CLC003.48	Lake Orange near Dam (Clear Creek)	2	N-F07L	N38 13.300	W78 00.916	Orange	Orange	Spatial, Major Fisherie, Hg in Carp	DGIF Freshwater Fishing Guide 2007, 2007 Data

Site #	River Mile	Stream Name	Priority	WBID	Latitude	Longitude	City/County	Topo Name	Problem	Reference
38	8-CON003.84	Contrary Creek arm of Lake Anna	1	N-F07L	N38 03.803	W77 51.464	Louisa	Lake Anna West	PCB 2 Species, Sed. Cu, Pb, & Zn, PCB & Hg in Carp	2000 Data Set. 2002 305b Report. Appen. B. York P.1, 2003 Data
39	8-DOV001.20	Lake Gordonsville near dam (Dove Creek)	1	N-F01L	N38 05.150	W78 12.016	Louisa	Boswells Tavern	Impaired	2006 303D list
40	8-GMC001.43	Goldmine Creek arm of Lake Anna	1	N-F07L	N38 06.262	W77 57.373	Louisa	Mineral	PCB 2 Species, PCB in Carp 2003	2000 Data Set. 2002 305b Report. Appen. B. York P.1, 2003 Data
41	8-HER005.12	Herring Creek near Rt. 609	2	N-F21R	N37 50.200	W77 10.030	King William	Beulahville	Not Supporting-pH, Hg in C. Pickerel, Bluegill, Yellow bullhead Cat, Largemouth Bass, & Flier	2002 305b Report. Appen. B. York P.3, 2003 Data
42	8-KNG000.18	King Creek	1	T-F27E	N37 16.558	W76 34.958	York	Clay Bank	PCB in Croaker, Spot, Mummichog, Gizzard Shad, Pb in Croaker, As in Croaker 2003	2000 Data Set. 2002 305b Report Draft. Appen. B. York P.5, 2003 Data
43	8-KNG001.36	King Creek	1	T-F27E	N37 16.592	W76 36.085	York	Clay Bank	Spatial Distribution, PCB in Croaker & G. Shad 2003	2000 Data Set. 305b Report. Appen. B. York P.5
44	8-MNQ004.19	Manquin Creek near Rt. 360	2	P-F13R	N37 42.886	W77 08.830	King William	Old Church	Not Supporting, Hg in Largemouth Bass 2003	2002 305b Report. Appen. B. York P.2, 2003 Data
45	8-MPN014.33	Mattaponi River near end of Rt. 602, Melrose Landing	2	P-F25E	N37 38.240'	W76 51.390'	King William	Truhart	Spatial Distribution, Major Fishery	DGIF Freshwater Fishing Guide 2007
46	8-MPN029.08	Mattaponi River near Rt. 629 at Walkerton		P-F23E	N37 43.372	W77 01.438	King William	King William	Spatial Distribution, Major Fishery	DGIF Freshwater Fishing Guide 2007
47	8-MPN041.41	Mattaponi River near Rt. 360, Old Hall Landing	1	P-F23R	N37 48.589	W77 05.582	King William	Aylett	PCB, Arsenic, & Benzo(b) & benzo(k)fluoranthene, Hg in Channel Catfish, Largemouth Bass, Yello Perch, Pb in Channel Catfish, Largemouth Bass, Yellow Perch G. Shad PCB in Striped Bass and G. Shad	2000 Data Set. 2002 305b Report. Appen. B. York P.3, Recommended for Delisting in 2006 WQA Report
48	8-NAR034.92	Lake Anna near Dam (North Anna River)	1	N-F07L	N38 00.862	W77 42.771	Louisa	Lake Anna East	Hg in Carp, PCB in Carp and Channel Catfish	1995 & 2000 Data Set. 2002 305b Report. Appen. B. York P.1
49	8-NIR012.99	Ni Reservoir near dam (Ni River)		N-F15L	N38 14.917	W77 35.681	Spotsylvania	Spotsylvania	Spatial Distribution, Major Fishery	DGIF Freshwater Fishing Guide 2007
50	8-NST003.46	Northeast Creek	1	N-F09R	N38 02.600	W77 41.600	Spotsylvania	Lake Anna East	Spatial Distribution	PCB problems in watershed
51	8-NTH004.05	Northeast Creek Reservoir (Northeast Creek)		N-F03L	N37 58.867	W77 56.189	Louisa	Pendleton	Spatial Distribution, Major Fishery	DGIF Freshwater Fishing Guide 2007
52	8-PMK006.36	Pamunkey River near Eltham	1	P-F14E	N37 31.552	W76 52.182	King William	West Point	PCB 1 Species	2002 Data Set. 305b Report. Appen. B. York P.2
53	8-PMK032.00	Pamunkey River near Lester Manor	1	P-F14E	N37 34.151	W77 01.289	King William	Tunstall	Sed Zn, PCB 1 Species 1995, Hg in Largemouth Bass & Channel Catfish	1995 Data, 2000 Data 305b Report. Appen. B. York P.2, 2003 Data
54	8-PMK056.87	Pamunkey River at Rt. 360 near Old Church	2	P-F13E	N37 41.140	W77 11.001	Hanover	Manquin	Hg in Spotted Bass, Bluecatfish, Redbreast Sunfish	2003 Data
55	8-PMK082.34	Pamunkey River near Rt. 614 at Normans Bridge off Rt. 301	2	P-F12R	N37 46.062	W77 19.913	Hanover	Hanover	Pb in Spotted Bass, Channel Catfish	2003 Data
56	8-QEN002.47	Queen Creek	1	T-F26E	N37 17.883	W76 39.050	York	Williamsburg	Pb in Bluecrab, PCB in Croaker, Spot, Gizzard Shad	1994 Data, 2000 Data 305b Report Draft. Appen. B. York P.4, 2003 Data
57	8-QEN005.62	Queen Creek	1	T-F26E	N37 17.663	W76 41.442	York	Williamsburg	Pb in Bluecrab, PCB in Gizzard Shad	1994 Data, 2000 Data 305b Report. Appen. B. York P.4, 2003 Data
58	8-RDY000.87	Reedy Mill Pond (Reedy Creek near Rt. 601)	2	N-F21L	N37 53.767	W77 18.211	Caroline	Penola	Spatial Distribution	DGIF Freshwater Fishing Guide 2007
59	8-RDY003.43	Reedy Creek near Rt. 648 - Sunshine Road	2	N-F21R	N37 53.125	W77 20.666	Caroline	Penola	Spatial Distribution	DGIF Freshwater Fishing Guide 2007
60	8-SAR021.22	South Anna near Rt. 33	2	P-F04R	N37 45.609	W77 36.730	Hanover	Hanover Academy	Spatial Distribution	DGIF Freshwater Fishing Guide 2007
61	8-SAR097.82	South Anna River near Rt. 603 Bridge	2	N-F01R	N38 05.517	W78 11.400	Louisa	Boswells Tavern	Not Supporting-Fecals	305b Report Draft. Appen. B. York P.1

Site #	River Mile	Stream Name	Priority	WBID	Latitude	Longitude	City/County	Topo Name	Problem	Reference
62	8-TRY001.33	Terry's Run arm of Lake Anna	2	N-F07R	N38 08.917	W77 53.629	Spotsylvania	Lahore	Spatial Distribution. Near Partial Supporting Water Section, Hg in Carp, PCB in Largemouth Bass, Bluegill Sunfish, White Catfish, Carp	305b Report. Appen. B. York P.1, 2003 Data
63	8-WOR000.35	Wormley Creek	1	T-F27E	N37 12.696	W76 28.153	York	Poquoson West	PCB in 2 Species, As in Bluecrab, White Perch, PCB in Gizzard Shad	2000 Data Set. 305b Report. Appen. B. York P.6
64	8-YRK005.93	York River near Rt. 17 bridge		P-F24E	N37 14.573	W76 30.393	York	Yorktown	Spatial Distribution	-
65	8-YRK016.57	York River	1	T-F27E	N37 21.353	W76 38.176	Gloucester	Willamsburg	Pb in Croaker, PCB in Gizzard Shad	2000 Data Set. 305b Report. Appen. B. York P.6, 2003 Data
66	8-YRK022.70	York River	1	T-F26E	N37 25.100	W76 41.600	Gloucester	Gressitt	Severly Impaired (Benthics)	305b Report. Appen. B. York P.4
67	8-YRK031.48	York River near West Point at Buoy 59	1	T-F26E	N37 30.733	W76 47.583	New Kent	West Point	PCB in Gizzard Shad & Croaker	2003 Data
	James River Basin									
68	2-MIG000.67	Mill Creek	1	T-G15E	N37 00.780	W76 18.497	Hampton City	Hampton City	Special Request Waste Division BRAC Project Fort Monroe	Waste Div Files
69	2-MIG001.49	Mill Creek	1	T-G15E	N37 01.490	W76 18.321	Hampton City	Hampton City	Special Request Waste Division BRAC Project Fort Monroe	Waste Div Files
70	2-MIG002.32	Mill Creek	1	T-G15E	N37 02.096	W76 18.846	Hampton City	Hampton City	Special Request Waste Division BRAC Project Fort Monroe	Waste Div Files
71	2-JMS000.50	James River light off Fort Wool	1	T-G15E	N36 59.220	W76 18.153	Hampton City	Hampton City	Special Request Waste Division BRAC Project Fort Wool	Waste Div Files
	Potomac Basin Embayments									
72	1AAC001.78	Accotink (Creek) Bay	1	N-A15E	N38 41.231	W77 09.589	Fairfax	Fort Belvoir	Spatial Distribution	2006 305B Report
73	1AAC011.62	Accotink Creek Below Accotink Lake Dam	1	N-A15R	N38 47.457'	W77 13.037'	Fairfax	Annandale	Citizen Request for Trout Analysis	2006 Files
74	1AAC014.38	Accotink Creek at Wakefield Park	1	N-A15R	N38 49.275'	W77 13.545	Fairfax	Annandale	Citizen Request for Trout Analysis	2006 Files
75	1AAUA003.71	Aquia Creek	1	N-A28E	N38 25.366	W77 21.319	Stafford	Widewater	Impaired, NRO Special Request	2006 305B Report
76	1ACHO000.90	Chopawamsic Creek	1	N-A26E	N38 30.519	W77 19.043	Prince William	Quantico	Impaired, NRO Special Request	2006 305B Report
77	1AFOU000.45	Fourmile Run	1	N-A12E	N38 50.450	W77 03.085	Arlington	Alexandria	Impaired, NRO Special Request	2006 305B Report
78	1AHUT000.01	Hunting Creek	1	N-A13E	N38 47.375	W77 03.047	Alexandria	Alexandria	Impaired, NRO Special Request	2006 305B Report
79	1ALIF000.19	Little Hunting Creek	1	N-A14E	N38 42.783	W77 04.434	Fairfax	Mount Vernon	Impaired, NRO Special Request	2006 305B Report
80	1ANEA000.57	Neabsco Creek	1	N-A25E	N38 36.024	W77 15.417	Prince William	Quantico	Impaired, NRO Special Request	2006 305B Report
81	1APOH002.27	Pohick (Creek) Bay	1	N-A15E	N38 40.835	W77 10.087	Fairfax	Fort Belvoir	Impaired, NRO Special Request	2006 305B Report
82	1APOM001.04	Potomac Creek	1	N-A29E	N38 20.809	W77 18.261	Stafford	Passapatanzy	Impaired, NRO Special Request	2006 305B Report
83	1APOW001.11	Powells Creek	1	N-A26E	N38 35.164	W77 16.097	Prince William	Quantico	Impaired, NRO Special Request	2006 305B Report
84	1AQUA001.00	Quantico Creek	1	N-A26R	N38 32.299'	W77 17.337	Prince William	Quantico	Impaired, NRO Special Request	2006 305B Report
85	1AMON002.60	Monroe Bay	1	P-A31R	N38 15.048'	W76 58.304'	Westmoreland	Clonial Beach N	Impaired, PRO Special Request	2006 305B Report

Fig. 1 Chesapeake Bay & Small Coastal R. Sites (1"= 13 Miles)

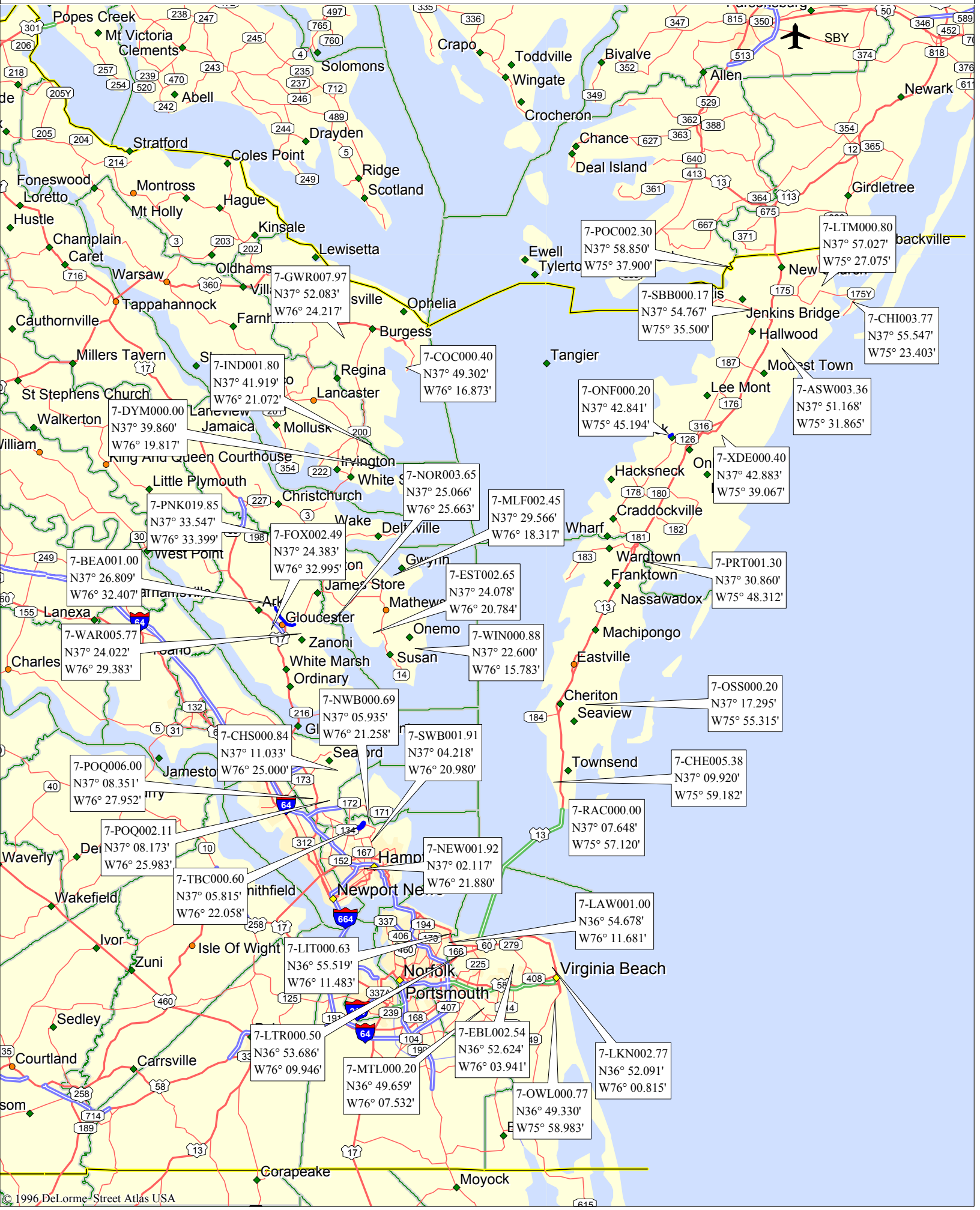

Fig. 2 York River Basin Sites (1"=13 miles)

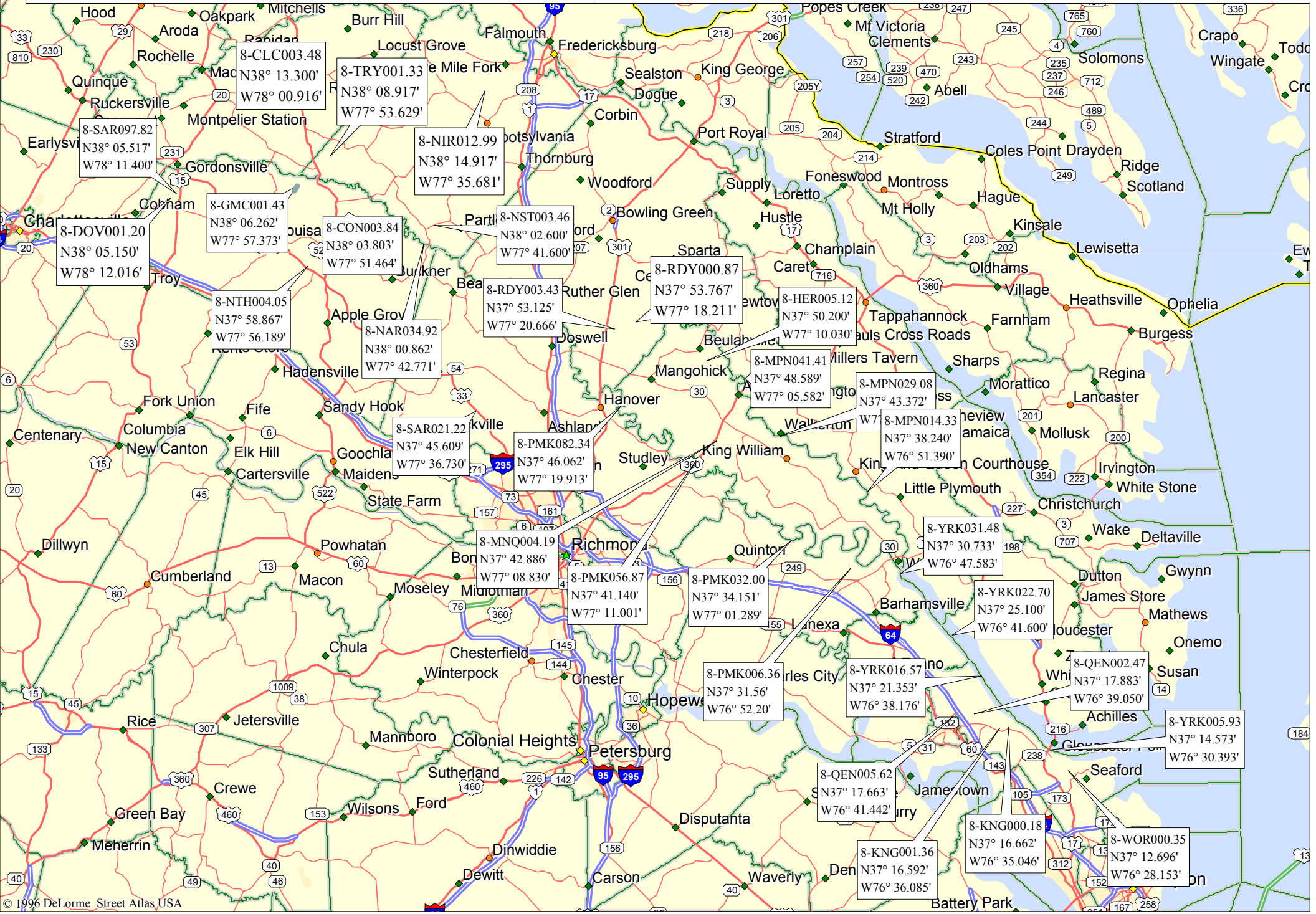

Fig 3. James River Sites (1" = 0.59 miles)

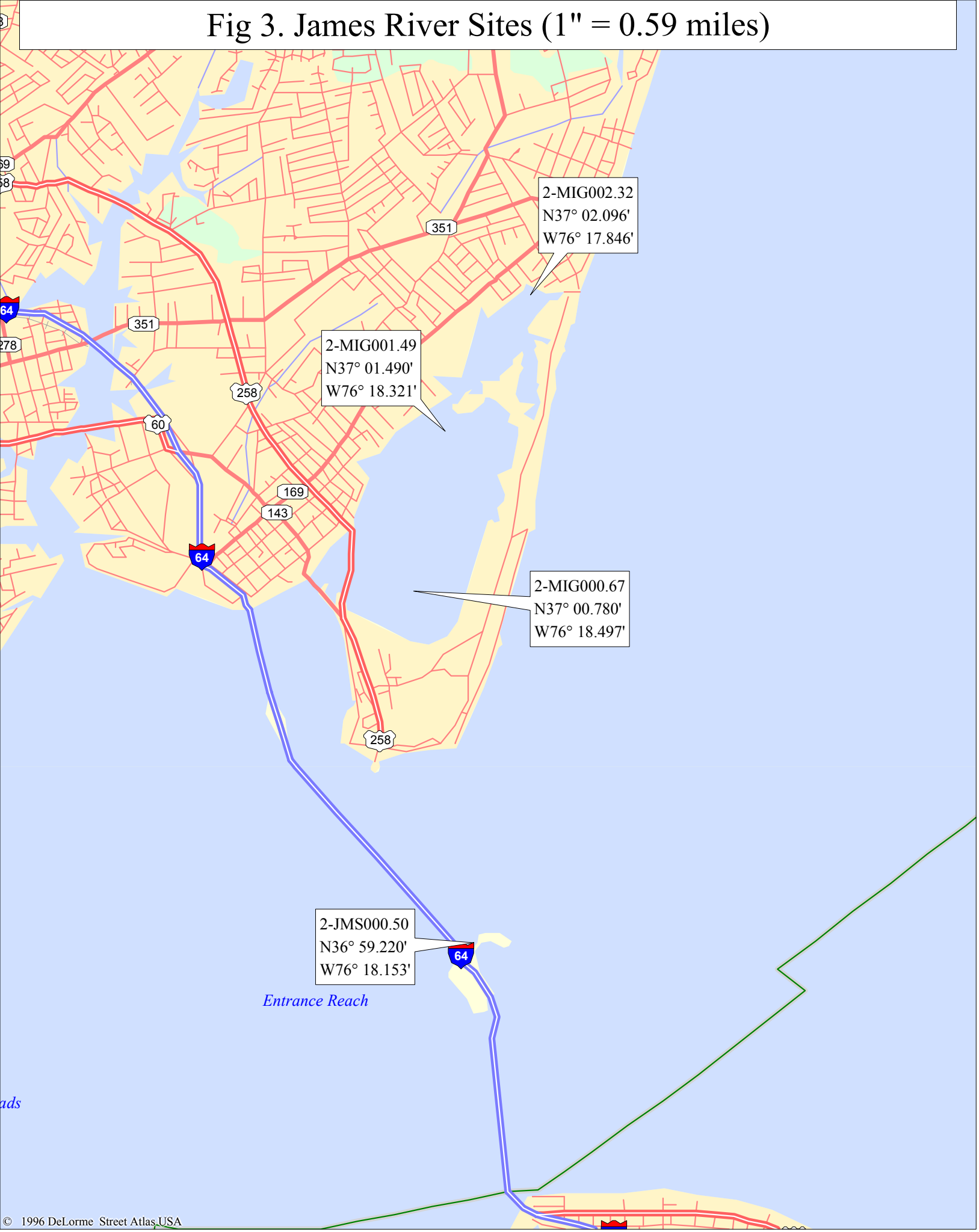

Fig 4. Potomac Sites (1"= 6.3 Miles)

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